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SIBERIAN BEES OF THE GENERA *HALICTUS, SPHECODES,* AND *HYLAEUS*

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The holotypes of the new forms described will be found in The American Museum of Natural History.

Halictus (Chloralictus) angaricus, new species

FEMALE.—Length about or slightly over 5 mm., anterior wing 3.8 mm.; head, thorax and abdomen green. Head a little longer than broad, finely punctured, blue-green, including the dullish, densely punctured supraclypeal area; clypeus with the upper part golden green, suffused with coppery, but more than the lower half swollen, black; mandibles rufescent in middle; flagellum red beneath except at base; hair of head and thorax scanty, rather dull white. Mesothorax mostly dull, but sides of disc shining, the whole surface closely and strongly punctured; the thorax above is yellowish green, not bluish green; scutellum shining on disc; metathorax dull dark bluish, the area, as seen under a lens, crescentic, appearing granular; sides of metathorax bluish green, pleura more yellowish green; tegulae small, clear red. Wings hyaline, slightly dusky, stigma pale yellowish, nervures very pale, first recurrent meeting second intercubitus. Legs mainly black, but knees, tibiae at apex, and the tarsi pale red, hind basitarsi with a dusky cloud. Abdomen yellowish green, shining, finely punctured, the margins of the tergites pallid; in the type the extreme base of third tergite is exposed, and is reddish; the abdomen is finely pruinose-pubescent, but without hair-bands. Microscopic characters: front excessively densely punctured; tegulae not punctured; postscutellum large, dull and granular; area of metathorax with very weak irregular plicae, more or less connected by a very fine reticulation.

Siberia: Ust Balei, on the Angara River, July (Cockerell).

By the sculpture of the mesothorax this resembles the German *H. aeneidorsum* Alfken, which is larger, with the front half of clypeus blue, and the mesonotum thickly hairy. From *H. smeathmanellus* Kirby it is easily known by its small size, and the strongly and closely punctured mesothorax. Compared with *H. mayacensis* Cockerell it is considerably smaller, with shorter head.

Halictus (Evylaeus) baleicus, new species

FEMALE (type).—Length about 7 mm., anterior wing 5 mm.; black, with the flagellum very obscurely brownish beneath, and the hind margins of the tergites narrowly pallid, slightly rufescent; hair of head and thorax moderately abundant, dull whitish. Head seen from in front broad, approximately circular; clypeus highly

polished, with strong, well-separated punctures; supraclypeal area shining, punctured; front dull. Disc of mesothorax shining, with distinctly separated punctures; scutellum with two shining areas, separated by a broad dull band; area of metathorax large, crescentic, coarsely rugulose, sharply defined behind; posterior truncation sharply defined at sides; tegulae not punctured, shining dark brown. Wings hyaline, faintly yellowish, stigma large, pale yellowish; nervures very pale, first recurrent joining apical corner of second cubital cell. Legs black, with pale hair, a tuft of bright copper red at end of the long hind basitarsi; hind spur with five stout, not very long, oblique spines. Abdomen polished, the punctures very weak; tergites with basal bands of grayish tomentum, broad on third, but much narrowed in middle, thin poorly defined apical bands on third and fourth; hair at extreme apex yellowish.

MALE.—With very long antennae, and cylindrical abdomen, identical in nearly all respects with *H. laticeps* Schenck. The following key separates the closely allied species.

1.—Mesonotum entirely dull, flagellum red beneath (Frankfurt, Germany). *fulvicornis* Kirby.

Mesonotum distinctly shining....2.

2.—Area of metathorax large; abdomen more robust, very black; flagellum all dark, or partly dusky reddish beneath....*baleicus*, new species.

Area of metathorax relatively small....3.

3.—Flagellum red beneath (Német Bogsan, Hungary)....*laticeps* Schénck.

Flagellum all dark....*mendax* Alfken (*affinis* Schenck).

Blüthgen has stated that *H. mendax* is not a valid species, as distinct from *H. laticeps*. My male *H. mendax* was determined by Strand, and is without locality.

Siberia: Ust Balei (type locality), July, five females and four males (Cockerell); Smolenschina, Aug. 17, one male (Cockerell).

A female was sent, several years ago, to Blüthgen, who wrote that it was apparently new, but near *H. fulvicornis* Kirby. The strongly but sparsely punctured disc of mesonotum places it rather with *H. laticeps* and *H. mendax*, and the male also seems nearer to these species. In the male *H. laticeps*, the front is broader, so that the inner orbits converge more rapidly below. This is not identical with any species from the Maritime Province of Siberia. It is distinguished from *H. sulcatulus* Cockerell by the broader head, and abundant white hair at sides of face. From *H. tutihensis* Cockerell it differs by the coarser and denser sculpture of area of metathorax, and the larger, paler wings. Another related species is *H. sibiriacus* Blüthgen, based on a female, 7.5 mm. long, from the Radsoskowsky collection, collected in East Siberia.

H. fulvicornis Kirby has been recorded from Irkutsk (Morawitz).

Halictus (Evylaeus) minutulus speculiferus, new subspecies

FEMALE.—Agreeing with *H. minutulus* Schenck, except that the basal area of metathorax is very large, shining, with very strong plicae at base, but on the apical

half these are represented only by fine lines. Head approximately round seen from in front; apical part of flagellum obscurely reddish beneath. Mesothorax shining, with well-separated punctures, the sculpture between the punctures indistinct; tegulae dark reddish brown. Wings hyaline with a large pale yellow stigma, and very pale nervures; apical truncation of metathorax shining, sharply defined all round. Legs black, including tarsi (*H. semilaevis* Blüthgen and *H. sibiriacus* Blüthgen have red-brown tarsi); hind spur with three oblique, rather slender spines, and a rudimentary fourth one (*H. minutulus* spur is quite the same). Abdomen shining, without hair-bands or spots, but apical part hoary with pale hair; hind margins of tergites rather obscurely rufescent. Length about 6 mm., anterior wing about 4.5 mm.

Siberia: Smolenschina, Aug. 21 (Cockerell).

H. minutulus varies in Europe; Schenck appears to have had no less than five names for it. I made a little table of some related species (females) as follows:

1.—Polished band along inner orbits very distinct; plicae of metathoracic area strong, reaching margin.....*puncticollis* Morawitz.
Polished band along inner orbits not evident; plicae of metathoracic area weaker. 2.

2.—Larger, anterior wing nearly 6 mm.; hind tibiae with dense yellowish hair. *laevis* Kirby.
Smaller, anterior wing about 4.5 mm.; hind tibiae with thinner grayish-white hair. *minutulus* Schenck.

The Smolenschina bee goes exactly to *H. minutulus* in this table. It is not any of the species I described from the Maritime Province. Compared with *H. brachycephalus* Cockerell it has the metathoracic area much larger and more shining. *H. perplexans* Cockerell and *H. trichorhinus* Cockerell have the abdomen quite different.

Halictus (Curtisapis) alinensis Cockerell

Siberia: Smolenschina, Aug. 17 (Cockerell).

The face is perceptibly broader than in the typical form, which comes from the Maritime Province of Siberia.

Sphecodes angarensis, new species

FEMALE.—Length about 9 mm., anterior wing 7 mm.; robust, the head and thorax with scanty pale hair; head, thorax and legs black. Head very broad, transverse, shaped nearly as in *S. intermedius* Blüthgen, but not so flattened above. Mandibles broad, black, faintly reddish apically, the inner tooth small and obtuse; labrum polished, with a transverse groove; clypeus very coarsely punctured; fourth antennal joint very short, broader than long, transverse, shorter than third when viewed from below; fifth longer than fourth, only a little broader than long; antennae black, the flagellum very faintly brownish beneath; vertex strongly and closely punctured, no crest behind ocelli. Mesothorax and scutellum highly polished, with very coarse irregular punctures, mesothorax with a median depression; area of metathorax coarsely and densely plicate; mesopleura coarsely rugosopunctate; tegulae

dark in front, clear reddish brown behind. Wings reddish fuliginous, very strongly colored; stigma very dark reddish; basal nervure falling far short of nervulus; second cubital cell high and narrow, receiving first recurrent nervure at about the beginning of its last third (in *S. sibiricus* the recurrent meets the second intercubitus); hind wing with ten hooks (8 in *S. sibiricus*). Hair on inner side of hind basitarsi slightly yellowish; spurs dull red; hind femora swollen basally (stouter than in *S. sibiricus*). Abdomen with the first three tergites bright red, the following black; first tergite (as seen under microscope) with widely spaced shallow piliferous punctures, and very minute ones scattered between, the apical part with only small very widely spaced punctures; second tergite punctured like first, third with the punctures much smaller.

Siberia: Ust Balei, on the Angara River, July (Cockerell).

At first sight, this could be taken for *S. sibiricus* Cockerell, which has a similar broad head; but it is easily separated from *S. sibiricus* by the polished, sparsely punctured discs of mesothorax and scutellum and the more finely sculptured area of metathorax. It also lacks the broad black band seen on the third tergite of *S. sibiricus*. In the European fauna, *S. spinulosus* v. Hagens is a similar species, but with a longer head, more closely punctured mesothorax, and a groove in middle of scutellum. In *S. spinulosus* there is a conspicuous broad band of rather dense punctures on apical part of first tergite.

Sphecodes fasciatus v. Hagens

Siberia: Smolenschina, one female, Aug. 21 (Cockerell).

Mandibles red, black at base; second antennal joint swollen, about as long as fourth, and third not much shorter. The first two tergites red, the second with a transverse black band, failing in middle, and not reaching sides; the second tergite has near base on each side a black spot, which is densely minutely punctured; first tergite impunctate, second with sparse punctures on basal part. Hind wing with five hooks.

Blüthgen has recorded *S. fasciatus* from Irkutsk. My insect differs little from European *S. fasciatus*, and I will not venture to separate it, but if it is distinct, it is probably the female of *S. impunctatus* Meyer, described from the male and regarded as a race of *S. fasciatus*. A male I collected at Kychtak, Siberia, was sent to Blüthgen, and he supposed it might be *S. impunctatus*. This small species and its relatives belong to the subgenus *Sphecodium* Robertson, 1903.

Hylaeus cardioscapus Cockerell

Siberia: females from Smolenschina, Aug. 21 (Cockerell) and Archan, August (Cockerell). The latter is rather more melanic.

Hylaeus sibiricus (Strand)

Siberia: A female from Smolenschina, Aug. 17 (W. P. Cockerell) runs in my 1924 table to *H. wilmattae* Cockerell, but is very easily distinguished by the interrupted yellow band on collar, shining mesothorax, clear wings, and other characters. It is evidently the female of *H. sibiricus*, of which I have a male from the same locality. The long-cuneiform lateral face-marks are very pale yellow, the clypeus has a transverse red apical mark, the tubercles are light, and the tegulae have a light spot. In Hedicke's table of Central European species (1930) it appears to run nearest to *H. pectoralis* Förster, but compared with a specimen of that species it is entirely different.

Hylaeus atromicans Cockerell (variety?)

Siberia: females from Smolenschina, Aug. 17 (Cockerell) and the University Station on Lake Baikal, August (Cockerell).

H. atromicans was based on a single female from the east coast of Siberia. The holotype is now in the U. S. National Museum. The present specimens seem to agree well enough; they are readily distinguished from *H. rinki* (Gorski) by the plicate area of metathorax. On this character they would rather fall with *H. pfankuchi* (Alfken), which is smaller. The new specimens differ from the type of *H. atromicans* in being about as large as *H. rinki*. *H. pfankuchi* was described from Germany (1918).

Hylaeus annularis Kirby (variety?)

Siberia: Smolenschina, Aug. 21 (Cockerell). One female, differing from European specimens before me by having the collar entirely black, though the tubercles are light-spotted. There is a small cuneiform yellowish-white mark on each side of upper part of clypeus; the flagellum is clear red beneath except at base.

Hylaeus communis excurrens, new subspecies

FEMALE.—Length about 6 mm., anterior wing 5 mm.; black, almost without hair, the margin of the first tergite laterally has some very short, hardly noticeable hair. Head subelongate, not circular seen from in front; face marks confined to sides, orange, long-cuneiform, very slender below, above obliquely truncate, but at uppermost end rounded, so that the highest point is not on orbit; malar space very short; clypeus and supraclypeal area dull; facial foveae running parallel with orbit, and very close to it; antennae black, third joint about as long as fifth, fourth conspicuously shorter. Collar above with two very small yellow marks; tubercles yellow, tegulae with a large yellow spot; mesothorax dull, with dense but very evident punctures; scutellum somewhat shining, and the punctures larger; base of metathorax

with a broad transverse very strongly plicate glistening band, sharply separated from apical part of area, which is dull and granular; mesopleura finely punctured, like mesothorax. Wings dilute reddish brown, stigma dark reddish; first recurrent nervure meeting intercubitus. Legs black, with a yellow spot at base of front tibiae, and hind tibiae with about the basal third pale yellow. Abdomen highly polished, first tergite appearing impunctate under a lens, second very finely punctured; the microscope shows widely scattered excessively minute piliferous punctures on first tergite.

Siberia: Smolenschina, near Irkutsk, Aug. 17 (Cockerell).

Very like *H. communis* Nylander, but differs by the shape of the lateral face-marks, and the light marks on collar, It is not the variety *ebeninus* Foerster, the female of which has the front and middle tibiae yellow at base, and the hind tibiae with basal half yellow. The variety *nigrifacies* Alfken is based on a black-faced female. I suppose that the present insect represents a valid race, but the discovery of the male may show it to be a distinct species. The metathorax is suggestive of *H. gracilicornis* Morawitz, but that is a smaller species, with the flagellum reddened beneath.

The above species of *Hylaeus* may be separated (females) thus:

1.—Face all black; wings reddened; tubercles yellow..... *atromicans* Cockerell.
Face with light marks; tubercles at least partly light.....2.
2.—Face-marks short, cunieform, white, next to upper part of clypeus, and away from orbits..... *annularis* Kirby.
Face-marks elongate.....3.
3.—Face-marks broad above.....4.
Face-marks narrow..... *cardioscapus* Cockerell.
4.—Face-marks orange, clypeus all black..... *communis excurrens* Cockerell.
Face-marks light yellow, clypeus with a red apical mark..... *sibiricus* Strand.

In general, the Asiatic *Hylaeus*-fauna seems to be very distinct from that of Europe. Alfken (1936) has recently published a list of thirteen species from Tadzhikistan and Turkmenia, and only one of these (*H. variegatus* Fabricius) is in Hedicke's table of central European species. Another (*H. punctus* Foerster) was described from Dalmatia.

C. P. Alexander (1935) has published a list of the species of *Tipula* of Palaearctic Central Asia, and it is remarkable that the species are nearly all peculiar to Asia. Even the common *Tipula oleracea* Linnaeus appears to be absent from Central Asia.